

REMARKS

In the Office Action, the Examiner objected to drawing Figure 3, objected to claims 5 – 18 as multiple dependent claims dependent on other multiple dependent claims, rejected claim 1 under the second paragraph of section 112, rejected claims 1, 2, and 4 as anticipated by Lagoy, rejected claims 1 and 2 as anticipated by Mozdzen, rejected claims 3 and 4 as obvious over Lagoy in view of Harrison.

Drawing Objection

The drawing Figure 3 has been amended to include a label “Prior Art” as requested by the Examiner. The objection is thereby overcome.

Claim Objections

The claims currently pending in the present application include no multiple dependent claims, so the objection to the claims as multiple dependent claims dependent on other multiple dependent claims under rule 1.75(c) is in error. The present PCT application entered the US National Phase with an English translation of the German language PCT application and a Preliminary Amendment in which a substitute specification and amended claims were presented. The amended claims amended all the claims of the application and presented the claims in a form for prosecution before the US Patent and Trademark Office without multiple dependent claims. The Examiner is respectfully requested to enter and consider the Preliminary Amendment, including the claims as presented therein.

No Second Action Final

In view of the claim objection to multiple dependent claims, it appears that the December 12, 2003, Office Action has failed to consider the proper set of claims. As such, a second action final would be inappropriate, since the pending claims have not yet been considered.

35 USC 112, 2nd ¶

The language noted by the Examiner is also found in the amended claim 1 of the Preliminary Amendment. As such, claim 1 has been amended as noted above to address the section 112 rejection. Applicants submit that the amended claim overcomes the rejection.

35 USC 102(b)

In the Office Action claim 1 is rejected as being anticipated by Lagoy (US 4,916,645) and being anticipated by Mozdzen (US 5,774,001).

Lagoy (US 4,918,645) discloses a method and an apparatus for a digital computer system having a system bus for interconnecting together various agents. The agents are provided with dynamic rams (DRAMs) and a typical controlling mechanism for writing and reading data to and from the DRAM. A buffer 72 is provided between the memory 60 (DRAM) and the system bus 10 which is embodied as data latch. Such data latches are transparent electronic components which means if the data latch is enabled, the output of the data latch is identical to the input.

The present invention, however, as described in the Preliminary Amendment at page 44, line 11 to page 44, line 4, particularly at page 44, lines 14 to 17, comprises a data bus driver 3 which is a non-transparent electronic component.

The distance between a transmitter and a receiver is divided in three sections and the signal propagation time in the individual sections is significantly shorter than over the entire distance between two controllers, as it is described on page 46, first paragraph.

As it is described on page 44, during a first clock pulse the controller 4 of the transmitter assembly S transmits a data word to the data bus driver of the transmitter assembly S. The data bus driver 3 stores the data word and converts it into a signal that is suitable for the data bus 5, whereby the signal is present at the signal lines of the data bus during the following second clock pulse. During the second clock pulse these electrical data signals are accepted by the data bus driver 3 of the receiver assembly 2, they are temporally stored and are transmitted to controller 4 of the receiving assembly E during the following third clock pulse.

The corresponding address signals/data signals ADN — not AND are shown in Figure 4. As it can be seen in Figure 4, different data words are simultaneously transmitted from the transmitter assembly S to the data bus driver and from the data bus driver of the transmitter assembly S to the data bus driver of the receiver assembly. This is obviously only possible, when the data bus driver is fashioned as a non-transparent electronic component.

As discussed above, the buffer 72 shown in Lagoy (US 4,918,645) is a transparent data latch which does therefore not show the function of the invention of the transmission of data by each clock pulse.

The inventor has reviewed the Lagoy reference and he doubts whether this known device is able to read or to transmit data to or from the bus by each clock pulse. According to the inventor's understanding, data can be written to or read from the system bus only at every 4th clock pulse, if a synchronous data transmission is carried out. The disclosure of this document is silent with respect to the controlling of the data latch 72 as the relevant signal DENO 66j is not shown in the drawings and is not described in detail.

But nevertheless this data latch is a transparent electronic component which makes it impossible to receive and transmit data words during the same clock pulse.

To more clearly distinguish the invention of claim 1 over the cited reference, the claim has been amended to provide that the data bus driver is a non-transparent electronic component.

The **Mozdzen** (US 5,774,001) reference describes a computer system using a delayed clock signal. This computer-system uses of clock signals and is a single-processor system.

Such delayed clock signals are well known in the prior art. However, it is not practicable to use a delayed clock signal for a bus system according to the invention as it is very complicated to realize a bi-directional data transmission with a delayed clock signal in a multi-processor system. The invention uses only a single clock signal. Thus, someone skilled in the art would never regard this document as relevant prior art.


35 USC 103(a)

Even when considered with the Harrison reference, the Lagoy patent does not disclose the claimed invention, or is a suggestion found therein of the claimed combination. The invention is therefore non-obvious over the art.

Conclusion

Applicants respectfully request favorable reconsideration of the present application including favorable consideration and allowance of the claims.

Respectfully submitted,


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on March 12, 2004.



CHI\4121791.1